Izuka Ikedionwu

(931) 252-5745 · izukaikedionwu@gmail.com · https://izukasportfolio.vercel.app/

EDUCATION

Master of Science in Electrical & Computer Engineering | 2026 | Baylor University

Bachelor of Science in Electrical & Computer Engineering | 2025 | Baylor University |

- Minors in Computer Science and Mathematics, VP of Computing for Compassion, Baylor Master Tutor

EXPERIENCE

SPACEX — Spring & Summer 2024

Starlink Hardware Design Engineer | Instrumentation & Control Systems Engineer

- Led $4 million cost savings project designing analog & power electronics TX/RX transient stability, output ripple, and control loop stability, and efficiency benchtop tests over temperature range for various voltage regulators powering modem SOC
- Integrated next-gen DDR4 and eMMC (Flash Memory) modules into embedded phased array antenna hardware system
- Reduced rocket booster transportation time by 66% by integrating motor control and analog circuits with LabVIEW GUI streamlining data acquisition and monitoring
- Managed $8k industrial panel box project designing and installing DIN rail modules and used CAD for steel battery holder
- Performed root cause failure analysis using automated test setups on GNSS boot time problems, optimizing antenna test setups using Linux/bash, microcontrollers, automated lab equipment, and networking hardware for system reliability
- Shipped software that tested and validated 300 pressure sensor interface circuits and power supply modules for critical rocket engine tests

LOCKHEED MARTIN-SPACE — Summer 2023

Embedded Systems Engineer

- Implemented multi-FPGA SERDES RTL up to 1.4 GHz for high-reliability space telemetry applications
- Prototyped multi-FPGA benchtop testing in Python and SystemVerilog to validate design, integrating program-controlled oscilloscope, spectrum analyzer, power supply, multimeter, and signal generator

BAYLOR UNIVERSITY — Summer 2025 - Present

Graduate Research Engineer

- Designing wide band-gap synchronous front-end AC/DC converter utilizing SiC IGBT technology to reduce EMI for MIL-STD-461G standards for electric submarine applications
- Implemented hardware-in-the-loop testing on FPGA-based simulator for AC/DC and DC/AC controller algorithm validation

NON-VON, LLC (Dartmouth University Research AI Inference Start-Up) — Summer 2025

Edge Systems Hardware Engineer

- Increased power capacity by 33%, cut board area 12%, and reduced cost by 20%, enabling a lighter, higher-density UAV
- Designed 6-layer FPGA + MCU schematic and layout for drone-mounted AI vision with HDMI, Ethernet, SD, and M2 parts

BAYLOR LIQUID ROCKET ENGINE TEAM — Spring 2023-Spring 2025

Lead Electrical Engineer

- Led a 4-person team from concept to testing of software, electronics, and instrumentation for 2 liquid rocket engines
- Developed electronics stack and performed characterization with 7 sensor modules, mixed-signal interfaces, load switches, and DC/DC converters for rocket engine testing
- Wrote C++ and Python code for Wi-Fi, BLE, ADCs, DACs, EEPROM, UART, and SPI in Linux and Bare-Metal Systems

SKILLS

Hardware:

• MCUs, FPGAs , DC/DC & AC/DC Converters, Sensors (Pressure, Force, Temperature, Current), ADCs/DACs, PCB layout, Load Switches, Electric Motors, HW Validation, Computer Architecture, System Architecture

Software:

- C/C++, Python, SystemVerilog, ADS, FreeRTOS, MATLAB/Simulink, Linux, Altium, KiCad, Git, Vivado, NX Siemens

Communication Protocols:

- SPI, I2C, Ethernet, DDRX, SERDES, UART, USB, JTAG, SDIO, LVDS

Tools:

- Oscilloscope, Spectrum Analyzer, Vector Network Analyzer, Soldering, Logic Analyzer, Signal Generator, E-Load